

Patent Claims

1. A device for cooling heat-generating electrical or electronic components having a non-uniform output profile, comprising a heat-conducting unit (1) and a heat-absorbing unit which contains a phase change material (4), wherein the phase change material is arranged in such a way that heat flow from the electrical or electronic component to the heat-conducting unit (1) is not interrupted and a significant heat flow to the phase change material only occurs if the temperature of the heat-conducting unit (1) exceeds phase change temperature T_{PC} of the phase change material.
2. The device according to claim 1, wherein the phase change material-containing unit (4) contains at least one cavity (6) into which the phase change material has been introduced, where the cavities (6) are formed by the heat-absorbing unit (4).
3. The device according to claim 1, wherein the phase change material-containing unit (4) additionally contains a liquid/gaseous heat transfer medium (5).
4. The device according to claim 3, wherein the liquid/gaseous heat transfer medium (5) is a halogenated hydrocarbon.
5. The device according to claim 1, wherein a solid-solid phase change material is employed.
6. The device according to claim 1, wherein the phase change material is encapsulated.

7. The device according to claim 1, wherein the heat-conducting unit (1) has surface area-increasing structures.

8. The device according to claim 1, wherein the heat-conducting unit (1) has cooling fins.

5 9. A component (Z), comprising a cooling device according to claim 1, a heat-generating electronic component (2), wherein units (1), (4) and component (2) are arranged in such a way that the heat flow between the heat-generating electronic component (2) and the heat-conducting unit (1) takes place in direct contact.

10 10. A component (Z) according to claim 9, wherein the electronic component (2) is a computer CPU or memory chip.

11. A computer containing a component (Z) according to claim 9.

12. An electronic data processing system containing a device according to claim 1.

15 13. A mobile communication power switch or power circuit, a mobile telephone or fixed transmitter transmission circuit, an electromechanical actuator control circuit, a satellite communication or radar application high frequency circuit, or a domestic appliance or industrial electronic actuator or control unit, comprising a device according to claim 1.

20 14. A device for absorbing heat, comprising a heat sink and a heat absorbing component containing a phase change material, wherein heat flows from the heat sink to the heat absorbing component when the heat sink temperature exceeds the phase change temperature of the phase change material.

25 15. A device for absorbing heat, comprising a heat sink means and a heat absorbing means containing a phase change material, wherein heat flows from the heat sink means to the heat

absorbing means when the heat sink temperature exceeds the phase change temperature of the phase change material.

16. A device for absorbing heat, comprising, in contact with a heat-generating electric or electronic component, a heat sink and a heat absorbing component containing a phase change material, wherein heat flows from the heat sink to the heat absorbing component when the heat sink temperature exceeds the phase change temperature of the phase change material. .